

Southwest Region, Area 4

Integrated Roadside Vegetation Management Plan

2016



**Washington State
Department of Transportation**
Maintenance Operations Division

Introduction

The Washington State Department of Transportation (WSDOT) Southwest Region Area 4 manages approximately 460 miles of roadside right-of-way throughout Klickitat and Skamania counties. This right-of-way is part of the state highway system including US97, US197, SR14, SR141, and SR142. SR14 is part of the Lewis and Clark Trail Scenic Byway and west of Goldendale this highway passes through the Columbia River Gorge National Scenic Area. A map of the area is included as **Figure 1** on the following page.

The primary roadside vegetation management objectives are in relation to traffic safety and preservation of the highway infrastructure. Additionally, as a landowner WSDOT is required to control all listed noxious weeds that occur on the right-of-way by state law (RCW 17.10 and 15.15.010). It is important that WSDOT not only meet the legal requirements for weed control, but also consider the needs and concerns of adjacent landowners in this area.

In order to best manage roadsides with these priority objectives in mind, WSDOT practices an annually cycling process called Integrated Vegetation Management (IVM). Plans like this are maintained and updated annually for all areas of the state with an overall goal of establishing the most naturally self-sustaining roadside vegetation possible. Adjustments are made year to year in each area plan based on monitoring the previous years' accomplishments and results, available budget, and prioritization of other highway maintenance activities.

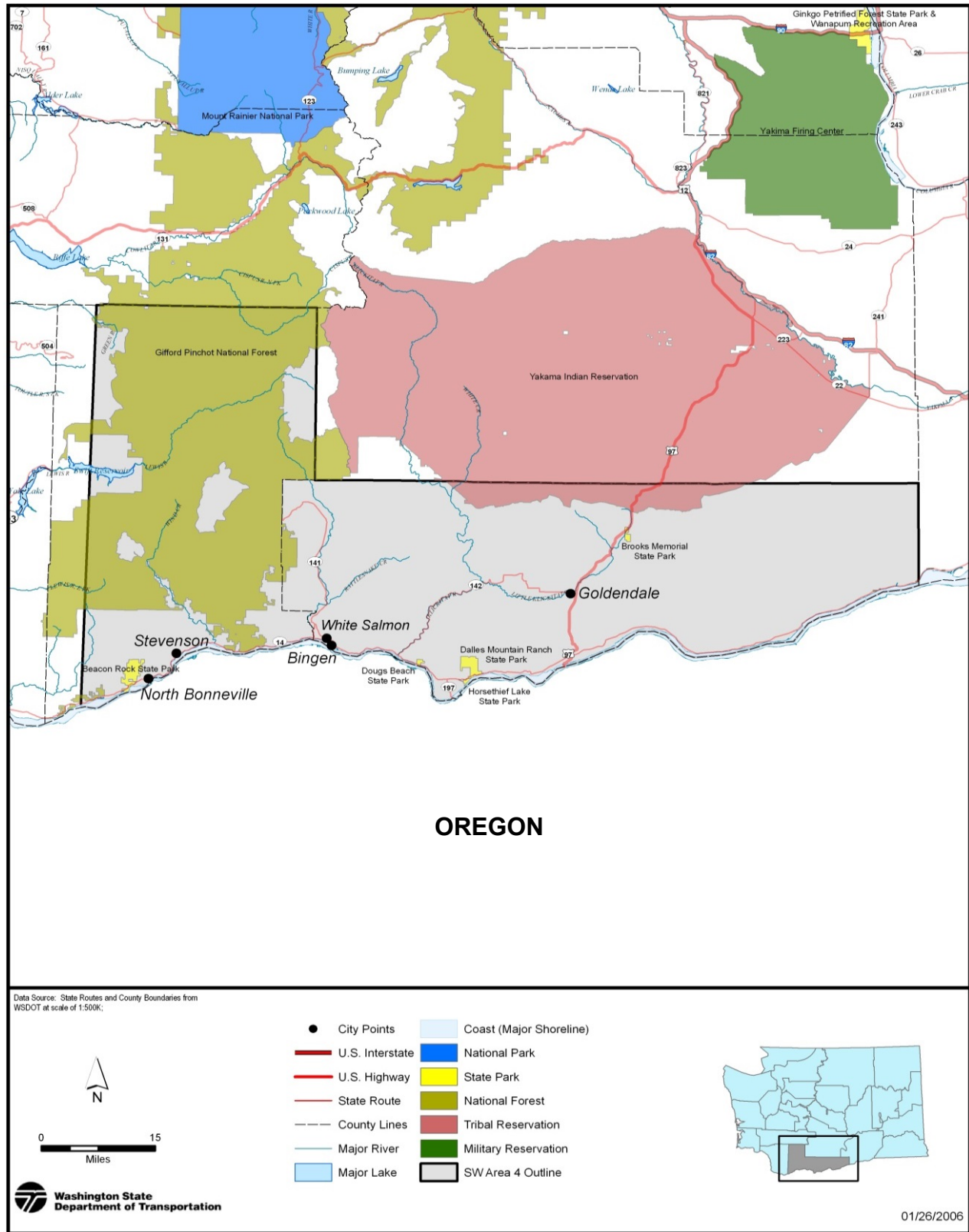
This plan serves as the guidance document for vegetation maintenance in Southwest Region Area 4 for the 2016 growing season. It provides detailed treatment prescriptions for accomplishing safety and weed control objectives through the use of a combination of control measures. Each year's actions are designed as part of a coordinated multi-year strategy to minimize roadside maintenance requirements wherever possible. This plan also accounts for specific locations where maintenance tactics are adjusted due to environmental conditions, neighboring land use, local partnerships, and restoration work done through WSDOT design and construction.

Beginning with the 2016 season, the information contained in this plan document can be geographically referenced by crews in the field using iPads and WSDOT's Highway Activity Tracking System (HATS). Accomplishments and results will also be tracked through this new system. This development in WSDOT maintenance management will greatly improve the agency's success in properly executing actions, monitoring and documenting results of treatments, and in measuring cost and results over time.

WSDOT welcomes input from local public and private entities on its weed control and other vegetation management activities. Wherever appropriate the agency is looking for opportunities to plan and cooperate with others in managing the roadside. Please direct any questions, comments or suggestions to the Southwest Region Area 4 Superintendent – Jay Chambers, or the State's Roadside Asset Manager – Ray Willard.

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**Southwest Region, Area 4 Vicinity Map
Figure 1**

Southwest Region, Area 4 IVM Work Plan – 2016

This is an outline the overall approach and geographic distribution of roadside vegetation management requirements throughout the area in 2016. Information is organized in relation to the three groups defined in the WSDOT Maintenance Accountability Program (MAP) for the performance of roadside vegetation maintenance activities: **Control of Vegetative Obstructions**, **Noxious Weed Control**, and **Nuisance Weed Control**. Specific locations as noted in this work plan are also mapped in WSDOT's Highway Activity Tracking System (HATS) for reference by maintenance in the field.

Control of Vegetative Obstructions – 3A4

The work of this group of maintenance activities relates to the safety and operational requirements of the highway. These items are considered first priority in terms of the overall roadside maintenance needs. Vegetation management objectives and work activities in this category fall into four groups – **Pavement Edge Maintenance/Zone 1**, **One Pass Mowing/Zone 2**, **Tree and Brush Control/Zone 2 and 3**, and **Hazard Tree Removal/Zone 3**.

Pavement Edge Maintenance/Zone 1

Work Operation: 1615

HATS Form: Zone 1 Spray

This work includes the application of herbicides to road shoulders in a select set of corridors and locations throughout the area. The objective of these applications in the designated locations is maintenance of a 2 to 3 foot gravel shoulder that is free of vegetation. This treatment is necessary in the locations described below to provide visibility and maintainability of roadside hardware and guideposts, room for vehicles to pull off on shoulders, stormwater drainage, and/or added visibility of wildlife approaching the highway.

Total Units of Planned Treatment

- Apply approximately **65 acres** of herbicide treatment to road shoulders throughout the area.

Locations of Planned Treatments

- Planned treatment sites are mapped in HATS layer – **Zone 1 Treatments**.
- Locations where bare ground treatments will be applied to all gravel shoulder sections include:
 - SR14 MP 28-52, and along rock walls between MP 54-55
 - SR97 MP .5-13 = 5.59 Acres
 - SR14 MP 83.5-152 = 7.19 Acres
 - SR14 MP 92.3-92.8 = ? acres
 - SR142 MP 18-35 = .824 Acre
- Locations where no bare ground treatment will be applied include:
 - US97 – MP 13-33
- For all other road shoulders in the area, bare ground treatments will be applied only under guardrail and cable rail.

Treatment Methods

- All noted locations will be treated in mid to late spring with the following mixture of herbicides and adjuvants:

Bingen Section

- Frequency @ 5 oz./acre
- Glyphosate @ 64 oz./acre

Goldendale Section

- Perspective @ 10 oz./acre
- Esplanade @ 7 oz./acre

- o Ranger Pro @ 32 oz./acre
- o InPlace @ 2 oz./acre
- o Syl-Tac @ 4 oz./acre
- o No-Foam@ 1 oz./acre

One Pass Mowing/Zone 2

Work Operation: 1625

HATS Form: Zone 2 One Pass Mowing

This work includes routine mechanical cutting of vegetation on the road shoulder immediately adjacent to pavement. Mowing is necessary in areas with taller growing grasses or other vegetation are present and must be annually or semi-annually cut back for visibility and maintenance of roadside hardware and delineators, to maintenance traffic sight distance at curves and intersections, and for improved visibility of wildlife approaching the highway.

Total Units of Planned Treatment

- Less than **10 acres** of spot mowing on shoulders is planned.

Locations of Planned Treatments

- This work is necessary at intersections, curves and some driveway approaches throughout the area where vegetation is encroaching on the roadway.

Treatment Methods

- Mow with string trimmers once a year in mid to late spring once vegetation growth begins to impact sight distance.
- Borrow radial arm mower for a week or two each year to trim as needed.

Tree and Brush Control/Zone 2 and 3

Work Operations: 1622, 1625, 1626

HATS Forms: 3 sub-forms under Tree/Brush Control – Spray, Trimming Mechanical, and Trimming Manual

This includes work in Zone 2 such as periodic trimming or removal of brush and trees encroaching on traffic operations and visibility. Also included is work in Zone 2 and 3 when controlling emergent undesirable tree species to prevent them from growing into hazard trees.

Total Units of Planned Treatment

- Approximately **50 acres** will be treated with a combination of herbicides, and manual or mechanical trimming throughout the area.

Locations of Planned Treatments

- Periodic trimming and control of tree seedlings is necessary along highways in forested areas throughout the area:
 - o SR14 MP 28-65
 - o SR141 and SR141 Spur
 - o SR142
 - o US97 MP 25-33

Treatment Methods

- The goal in controlling unwanted plant growth is to apply regular periodic maintenance activities in order to stay ahead of plant growth impacts on highway safety. Activities include a mixture of spraying, trimming with side arm mounted cutters, and hand tools. Typically, in forested roadside conditions, each location requires some form of trimming or seedling removal on a 3 to 4 year cycle. When herbicide application is used for trimming branches or removal of seedlings, the applications are made in late summer or early fall to decrease visual impacts. Some incidental herbicide treatments of tree and brush may also be conducted in conjunction with noxious weed control operations throughout the growing season. Herbicide prescriptions include:

- Krenite @ 128 oz./acre
- or**
- Element 3A @ 64 oz./acre

Hazard Tree Removal/Zone 3

Work Operation: 1628

HATS Forms: 2 sub-forms under Hazard Tree Removal – Individual Tree Removal and Stand Removal

Trees within and adjacent to the right of way are routinely monitored by maintenance staff for potential risk to the highway and/or neighboring structures. Individual and stands of trees identified as a potential imminent threat will be evaluated using best arboricultural judgment and removed as soon as possible where needed.

Total Units of Planned Treatment

- It is estimated that approximately **300 trees** will need to be removed.

Locations of Planned Treatments

- Priority areas are along US97, SR14, and SR141 where large trees have been killed by fires or effected by disease.

Treatment Methods

- Wherever possible trees will be dropped in place and left to naturally decompose.

Noxious Weed Control – 3A2

This group of activities is focused on control of weed species that are legally designated by state and county regulations for required control by all property owners. Work under this group is considered second priority after safety related objectives have been addressed. In some counties noxious weed laws may be enforced with fines and/or control work by the counties and billing of property owners if adequate control is not accomplished. WSDOT communicates annually and throughout the season with each County Noxious Weed Board to identify and prioritize infestations and planned control efforts on state highways.

In most cases the primary goal in noxious weed control is to prevent seed production and to reduce population levels where possible. The majority of IVM treatments are carried out as needed throughout the growing season on all highways in the area to accomplish this using a combination of manual, mechanical, herbicide, and/or biological agents. In addition, WSDOT and the County Noxious Weed Boards have identified a set of highest priority infestations where complete eradication and/or prevention of spread into uninfested regions are the goals.

General Noxious Weed Control

Work Operations: 1616, 1618, 1699

HATS Forms: 4 sub-forms under Noxious Weed Control/General – Noxious Weed Control/Spray, Noxious Weed Control/Mechanical, Noxious Weed Control/Manual, and Noxious Weed Control/Biological

These operations are timed and carried out throughout the season to prevent the spread of legally designated noxious weed species, and to reduce or eliminate populations wherever possible. Integrate treatment plans combine field monitoring and a mixture of seasonally timed treatment methods with proven effectiveness on designated species. Successful plans are consistently implemented over a series of years and annually adjusted as necessary based on field observations. Care must be taken in all cases to avoid damage to surrounding desirable/native vegetation.

Designated Species Known to Exist on WSDOT Right of Way

- Common fennel (*Foeniculum vulgare*) – Skamania County
- Dalmatian toadflax (*Linaria dalmatica* ssp. *dalmatica*)
- Hairy willow-herb (*Epilobium hirsutum*)

- Hoary cress (*Cardaria draba*)
- Knapweed, black (*Centaurea nigra*)
- Knapweed, diffuse (*Centaurea diffusa*)
- Knapweed, meadow (*Centaurea jacea x nigra*)
- Knapweed, spotted (*Centaurea stoebe*)
- Knapweed, Russian (*Acroptilon repens*)
- Kochia (*Kochia scoparia*) – Still designate?
- Loosestrife, purple (*Lythrum salicaria*)
- Poison hemlock (*Conium maculatum*)
- Puncturevine (*Tribulus terrestris*)
- Rush skeletonweed (*Chondrilla juncea*)
- Scotch broom (*Cytisus scoparius*) – Skamania or Klikitat?
- Tansy ragwort (*Senecio jacobaea*) – Skamania only?
- Thistle, Canada (*Cirsium arvense*)
- Thistle, Scotch (*Onopordum acanthium*)
- Yellow starthistle (*Centaurea solstitialis*)

Total Units of Planned Treatment

- Approximately **75 acres** will be treated with herbicides.
- Minor amounts of hand pulling will be conducted incidental to other activities.
- No mowing will be used for noxious weed control operations.

Locations of Planned Treatments

- Reference – HATS map layer **Noxious Weed/General** for species location and distribution.

Treatment Methods and Timing

- In many cases noxious weed control is accomplished with broad-spectrum herbicide treatments carried out when weeds are flowering and most visible in the late spring/early summer. In these cases, incidental treatments may be made targeting encroaching trees and brush, and to nuisance weed species.
- Whenever possible seasonally timed applications are planned and carried out for locations where eradication is possible. In the 2016 season area IVM technicians will create a map of priority infestations where seasonally timed applications will be made for the following species in the following year:

Early Season Targets

- Rush skeletonweed
- Kochia
- Yellow starthistle

Mid-Season Targets

- Yellow starthistle
- Rush skeletonweed
- Knapweed sp.
- Puncturevine
- Dalmation toadflax

Late Season Targets

- Puncturevine
- Dalmation toadflax

Herbicide Prescription

- Milestone@ 6 oz./Acre
- Vanquish@ 32 oz./Acre
- Syl-Tac@ 4 oz./Acre
- No-Foam@ 9 oz./Acre

- In-Place@ 3 oz./Acre

Priority Noxious Weed Control

Work Operations: 1616, 1618, 1641

HATS Forms: 4 sub-forms under Noxious Weed Control/Priority – Noxious Weed Control/Spray, Noxious Weed Control/Mechanical, Noxious Weed Control/Manual, and Noxious Weed Control/Cultural

These operations are timed and carried out throughout the season to prevent the
These operations are directed at locations where Class A noxious weed species are present on the right of way and state law requires complete eradication. Site specific integrated treatment plans are developed for each identified location/species. Ongoing operations will combine field monitoring and a mixture of seasonally timed treatment methods over a series of years. Sites must also be monitored for 3 to 5 years after control to check for grow back.

Priority Treatment Sites

- There are currently no Class A weed infestations present in SW Region Area 4.

Nuisance Vegetation Control – 3A3

Nuisance vegetation control includes control/management of weed species that are recommended but not mandated by state and/or county law. These maintenance activities also may address vegetation growth that presents a publically perceived negative visual impact. Because nuisance weed control activities are not legally mandated and they do not pose a safety risk, they are considered the last priority vegetation management needs. Maintenance funding currently only allows for control of nuisance weed species in designated higher profile areas such as urban freeway corridors and at interchanges or when they are growing alongside designated noxious weed species and control is incidental.

Total Units of Planned Treatment

- Approximately **30 acres** will be treated with herbicides for nuisance weed control.
- No mowing for nuisance vegetation will be done in this maintenance area.

Locations of Planned Treatments

- Reference HATS layer – **Nuisance Vegetation Management.**

Treatment Methods and Timing

- Nuisance weed control will only be done incidental to control of legally designated species, when species are growing in the same location.
- Selective treatment of some species/locations will be prioritized if nuisance weed species emerge in weed-free areas.